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SERIOUS ABOUT SOLAR

No longer for tree-huggers only, solar energy systems are getting consideration from more homeowners and commercial users concerned about future high fuel costs.

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Gary Mitchell uses solar energy to get his church into hot water.

No, not trouble. Hot water.

Mitchell is the business administrator for the 1,800-family Church of St. Joseph in Rosemount, and when it built an addition for its K-8 education program last year, the church went with a solar thermal water heating system along with a geothermal heat pump instead of the usual natural gas setup.

"Even though it cost a little more up front, the building committee was real determined to put in these systems," Mitchell said. He said the committee wanted to make an environmental statement, but it also was looking several decades ahead at the possibility of rising fuel costs.

That kind of long-term thinking may signal that solar energy systems are no longer just the pet projects of tree-huggers.

Systems still cost more to install than conventional options, but the price of solar panels has started to drop, incentives are up and sunlight is, of course, free. So businesses, churches, schools and homeowners are giving solar energy a serious look lately.

But solar thermal systems like the one on the roof of the Church of St. Joseph are still quite rare, even by alternative energy standards. Unlike the better-known solar electric systems, solar thermal systems collect heat from the sun the way a water hose left on the lawn on a hot summer day does.

The heat is transferred through pipes to tanks in a basement, where it warms up the water.

A renewable energy nonprofit organization has been campaigning all summer to raise the heat index of solar thermal's little-known charms by publicizing generous state rebates, to little avail.

While solar energy enthusiasts scooped up the state's \$2.5 million fund for solar electric rebates in a stampede in the spring, the much smaller \$500,000 pot for solar thermal rebates is still three-quarters full, the state Office of Energy Security reported recently.

"We're trying to get the word out because if people don't use the rebates for solar thermal systems, the money will roll over to solar electric rebates at the end of September," said Dan Thiede, a spokesman for the Clean Energy Resource Teams at the University of Minnesota's St. Paul campus.

Federal tax credits in combination with the state rebate can knock the price of a \$12,000 residential solar system down to about \$6,700, said Randy Hagen, president of Solar Skies, which manufactures solar

thermal systems in Alexandria.

He said solar thermal technology is more efficient than its electric cousin. The heat-collecting panels harvest up to 70 percent of the sun's energy while the solar electric's photovoltaic panels usually manage to collect only about 20 percent.

The systems don't replace conventional heating systems so much as they augment them. Thermal panels can heat water to 170 degrees in the summer and to 70 to 100 degrees in a Minnesota winter, reducing the amount of energy used by a conventional water heater.

So why isn't it better known?

Hagen sighed. "It's boring," he said. "There's not much that's exciting about heating your water." Most of his sales are out of state and not to individuals but to commercial entities, Hagen said. His largest system went to the Kalahari Water Park Resort at the Wisconsin Dells, not for its water slides but for hotel laundry and other domestic hot water uses.

Commercial interests with large hot water needs do in fact seem to be most interested.

A Laundry Room, a coin-operated laundry in Ely, used a \$5,000 grant from CERTs to install a \$24,000 solar thermal system last year. The system eases the cost of using propane to heat 420 gallons of water for the laundry's 21 washers, said Rebecca Spengler, the owner.

"It's been very encouraging," she said. The system should pay for itself in just under five years, she said. The Lift Bridge Beer Co. is studying whether a solar thermal system makes sense for its new beer-making facility in Stillwater, said Dan Schwarz, CEO and co-owner.

The beer-making process requires heating almost 500 gallons of water and malted barley -- called the wort -- to 160 degrees, Schwarz said.

He said he was approached by the CERTs staff who were fans of the beer and then did his own research. It looked like a good way to reduce energy costs and show a concern for the environment, but the company is waiting for a study to show if its rooftop is good for collecting solar energy, Schwarz said. Homeowners who install solar thermal systems, like Gil Young of St. Paul, tend to place a higher emphasis on the environment than on saving money.

Young, who studied energy and environmental policy in graduate school in the 1980s, installed a solar thermal system on his Portland Avenue house in St. Paul eight years ago.

By his estimates, he may have another two years before he breaks even on it, but that's not the issue. "In my view, this is part of a bigger picture. I think it's my responsibility to be a good steward of what God has given us. It's part of who I am and what I do," he said.

The building committee at the Church of St. Joseph felt the same way, according to Mitchell. Originally established in 1856 and rebuilt several times, it can also afford to take a longer view than most. "We figured we're building a building that will last 50 years," the administrator said. Leslie Brooks Suzukamo can be reached at 651-228-5475.

PIONEER PRESS PHOTO: SCOTT TAKUSHI

The Church of St. Joseph in Rosemount uses a combined geothermal and solar thermal mechanical plant to heat and cool its new 46,000-square-foot social hall and an addition to the church's K-8 school.